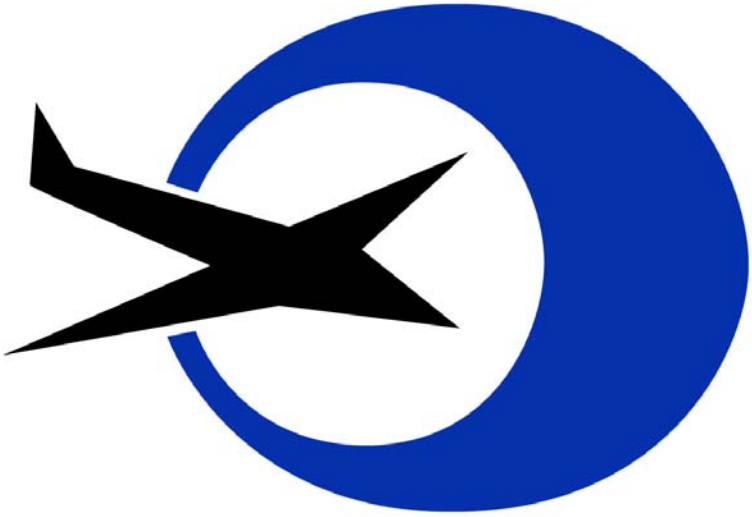
Free Flight Status Report



December 2002

Free Flight Program Status Report

Introduction

This status report provides an executive-level assessment of the programs managed within the Free Flight office. It focuses on significant topics reflective of current technical, schedule, cost and financial status.

The technical, schedule and financial data information presented in this report are as of December 31, 2002. Program financial data reflect the FY 2002 appropriation.

This report is designed to meet your needs. I am interested in your comments. Please direct comments to Anthony Willett, Free Flight Chief of Staff, at (202) 220-3300. His fax number is (202) 220-3312.

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John F. Thornton
Director, Free Flight

Free Flight Program Status Report

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Free Flight Program Status Report

Program Assessment Matrix

Capability Name	Team Leader	Technical Status	Schedule Status	Financial Status
FREE FLIGHT PHASE 1				
Collaborative Decision Making	Daniel Horton	G	G	G
User Request Evaluation Tool	Tom Spellerberg	G	G	G
Surface Movement Advisor	Darrell Woods	G	G	G
Traffic Management Advisor/ CTAS Terminal	Debbie Rooney	G	G	G

NOTE: Assessment criteria are discussed in Appendix B-1

Free Flight Program Status Report

Program Overview

The Free Flight program continues development of new air traffic management functionality. It sustains and enables initiation of a replacement program for existing infrastructure with a system that will allow integration and implementation of this new air traffic management functionality.

Advanced traffic flow functions are being developed to support real-time information exchange essential to furthering the progress toward FAA/industry collaborative decision making and the economics associated with implementing the concept called “Free Flight.”

The major program milestones for the deployment of Free Flight Phase 1 core capabilities, which have been the focus of this monthly report, have been met. Free Flight will continue to build on these successes and expand coverage of the capabilities throughout the National Airspace System. We will provide ad hoc reports in the future as events and program accomplishments warrant. What follows is a summary of the key benefits and results of the Phase 1 deployments.

Collaborative Decision Making has reduced delay by 10% during ground delay programs providing key information to airlines for more efficient resource management. Further, it has proved to be an invaluable tool to the air traffic system and the airlines in working toward system recovery in the aftermath of September 11.

The *Surface Movement Advisor* provides airlines with better aircraft arrival information during irregular operations resulting in a reduction in the number of bad weather diversions and improved aircraft turn-around times.

The *User Request Evaluation Tool* has resulted in an increase in direct routings of more than 15% in Indianapolis and Memphis centers. At these two centers alone, the increased direct routings along with better access to fuel efficient altitudes have resulted in more than $20M savings per year in airline direct operating costs. Four additional centers (Washington, Chicago, Cleveland, Kansas City) equipped with URET are showing trends indicating similar success.

The *Traffic Management Advisor* has resulted in a 3-5 percent increase in peak operations at 3 major airports, Dallas-Ft. Worth, Minneapolis-St. Paul, and Los Angeles. It has also resulted in increased airline fuel efficiency on descent at Miami, Atlanta, and San Francisco airports. We expect to realize similar peak capacity increases when time based metering is fully implemented.

Capabilities and Associated Flight Domains

• Average time flown from 40 nmi outside departure airport to 40 nmi outside arrival airport

• Flight time from 299 nmi range ring to meter fix

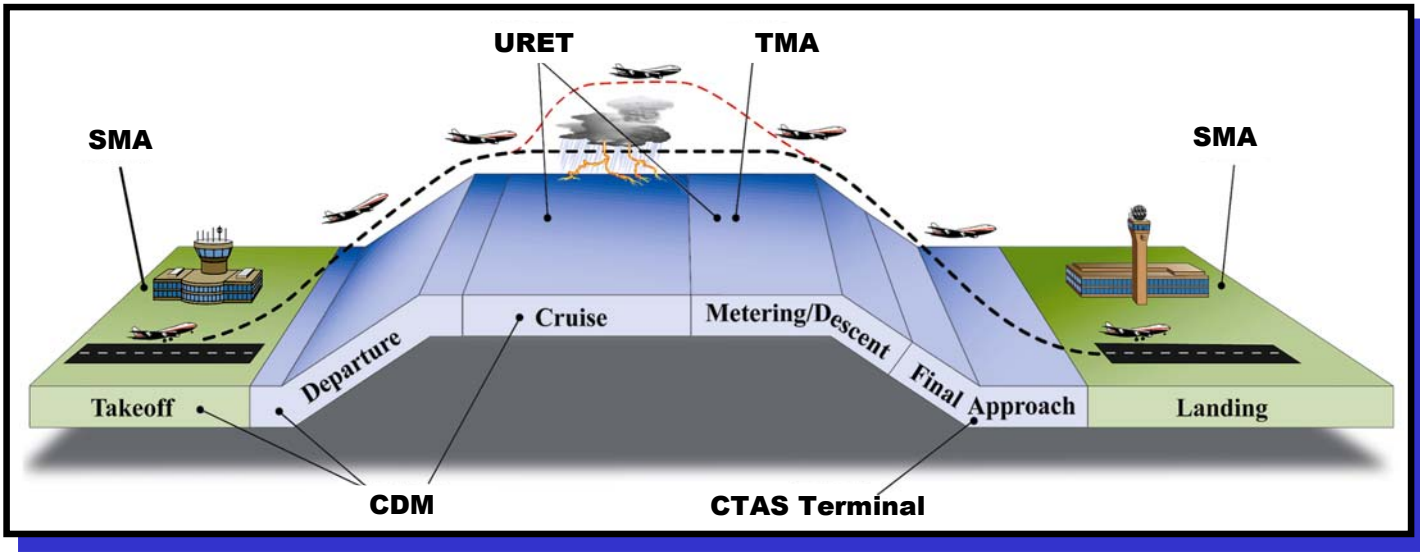
• Arrival delay (difference of planned time of arrival and actual time of arrival)

• Taxi times

• Gate delay

• Taxi times

• Gate delay

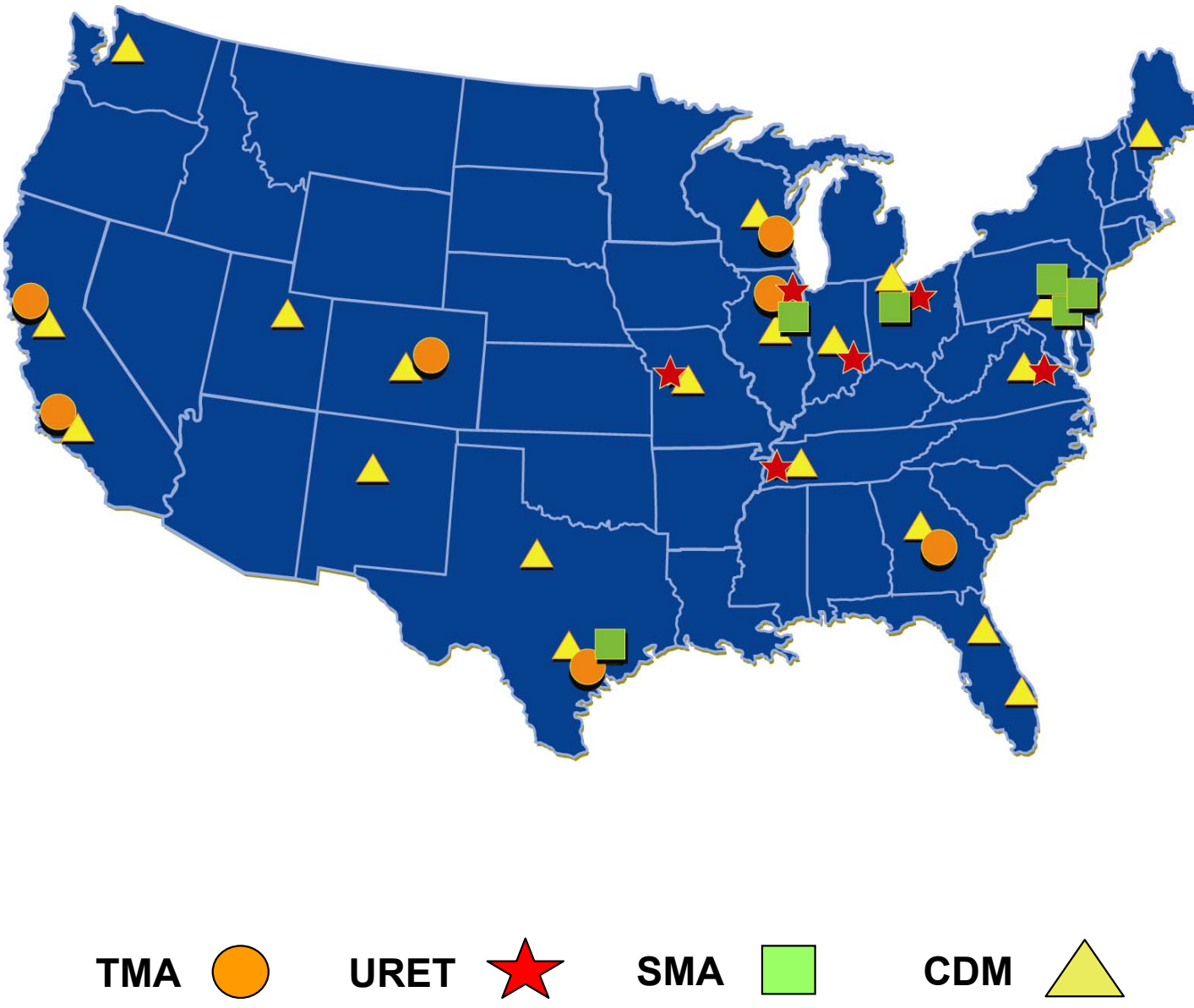


• Flight time (100 - 40 nmi from destination airport) during Ground Delay Program

• Average difference of planned time versus actual time (arrival time, departure time)

• Flight time from meter fix to runway threshold

Free Flight Successful Deployments



Collaborative Decision Making

This element of Free Flight allows FAA traffic flow managers to work in near real-time with the airlines in responding to NAS congestion. These decision-support services will be introduced to the NAS as prototypes so that the FAA and users may test new functions in an operational context and provide feedback on their design and implementation.

Technical Status

Current Assessment **G** **G** Previous Assessment

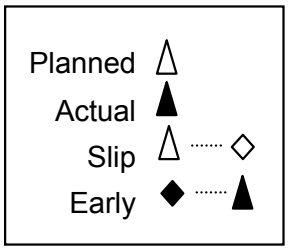
Significant Accomplishments:

- The Initial Collaborative Routing component of CDM is complete. It enables traffic management specialists at the central Command Center, traffic management coordinators at high altitude centers, and airline operations centers conferencing with a shared view of real-time traffic flow situations. It also provides a way for users to display alternate routing around hazardous weather and airspace in special use.
- The Ground Delay Program Enhancements component of CDM is complete.
- The Runway Visual Range data availability program is complete. Runway Visual Range sensors provide visibility measurements for the touchdown, mid-point, and roll-out points on instrumented runways every two seconds. This information is being provided in a data table every minute to participating users.
- Runway Visual Range data is available from 47 airports to FAA traffic flow managers and CDM participating airlines. The data is available on the internet at *http://rvr.fly.faa.gov*
- The Free Flight Phase 1 Collaborative Decision Making Program is complete. Command Center data is available on the Internet at *http://www.fly.faa.gov*

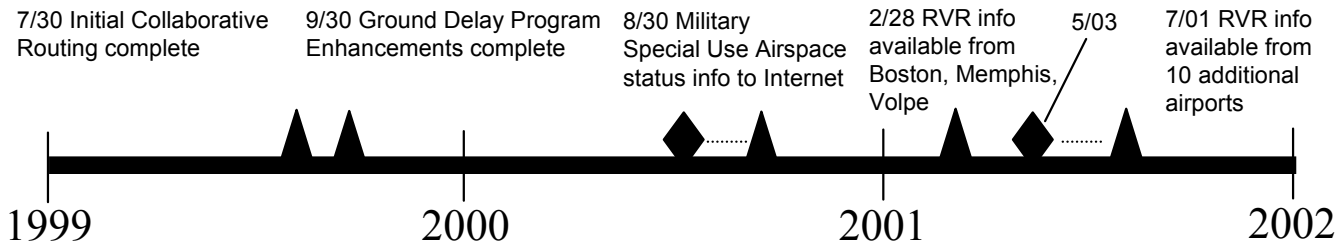
Collaborative Decision Making
Schedule Status

Current Assessment 

Previous Assessment



Schedule:



Near-Term Schedule:

Airport Configuration Data including active runways for approach and departure, types of departures and approaches, and remarks on safety and capacity became available	August 30, 2000	Complete
Runway Visual Range (RVR) operational test and evaluation was conducted at the FAA Technical Center	January 30, 2001	Complete
RVR Quick Look Report, the preliminary test results from the operational test, became available	February 14, 2001	Complete
RVR information became available to users from Boston and Memphis airports	February 28, 2001	Complete
National Airspace Change Proposal permitted additional airports to provide RVR information	April 30, 2001	Complete
RVR information available from 10 additional airports	July 31, 2001 May 03, 2001 (early)	Complete

User Request Evaluation Tool

URET is a decision-support tool. URET provides radar assistant (D-side) controllers with a strategic planning aid that predicts aircraft conflict 20 minutes into the future. The tool predicts whether an aircraft will violate minimum separation requirements with another aircraft or airspace. The tool allows the D-side controller to assist the radar controller in eliminating potential conflicts before the situation requires tactical maneuvering. This will allow the controller to approve more pilot requests for shorter or more optimal routing. URET core capability limited deployment will be implemented at seven sites, including Indianapolis and Memphis.

Technical Status

Current Assessment **G** **G** Previous Assessment

Significant Accomplishments:

- Software build 1.6j was installed at Chicago, Indianapolis, Memphis, and Washington centers on December 2. The release provides the capability to fully operate in the interfacility automation mode.
- All FFP1 URET sites declared Planned Capability Achieved status on December 31, 2002.
- A site survey was completed at Kansas City center on December 12 in preparation for URET technical refreshment in 2003.

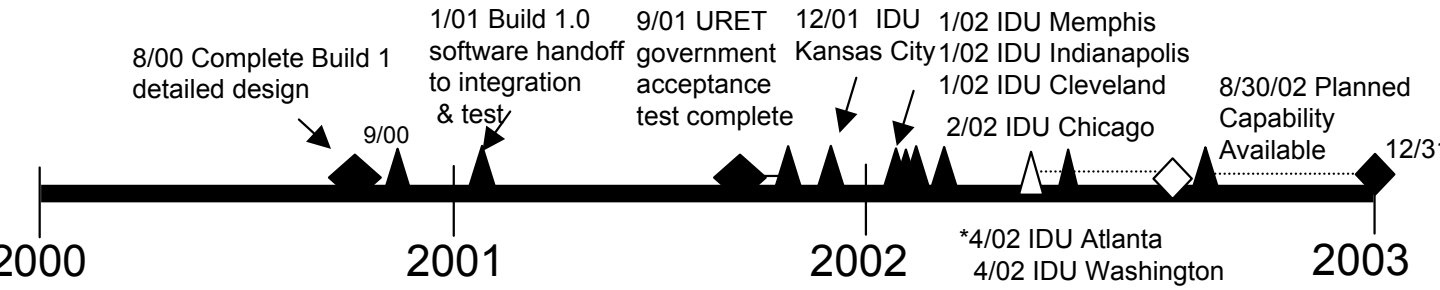
User Request Evaluation Tool

Schedule Status

Current Assessment **G** **G** Previous Assessment

Planned △
Actual ▲
Slip △ ····· ◇
Early ◆ ····· ▲

Schedule:



•System installed. IDU delayed due to staffing shor
•IDU scheduled for Free Flight Phase 2.

(Build 1.0 will provide all functionality identified by user team of air traffic controllers required for initial daily use.)

Near-Term Schedule:

Kansas City installation and checkout completed	April 23, 2001	Complete (5 weeks early)
National Airspace System software (release A5f1.2) available for key site test. Release A5f1.2 is a software improvement that is necessary for URET to operate with the host computer	June 15, 2001	Complete
Kansas City Center Initial Daily Use	*December 3, 2001 *Delayed from 10/31 due to events of 9/11	Complete
Memphis Center Initial Daily Use	January 26, 2002	Complete
Indianapolis Center Initial Daily Use	January 27, 2002	Complete
Cleveland Center Initial Daily Use	January 30, 2002	Complete
Chicago Center Initial Daily Use	February 25, 2002	Complete
Washington Center Initial Daily Use	April 12, 2002	Complete (4 weeks early)
Atlanta Center Initial Daily Use (Rescheduled to FFP2)	April 23, 2002	Delayed due t staffing shorta

ecember 2002

Surface Movement Advisor

The information sharing at airports has been enhanced through the SMA Free Flight Phase 1 (FFP1) capability, providing airport ramp towers with a one-way feed of current traffic information previously unavailable to them. Specifically, at those airports where SMA is implemented, Automated Radar Terminal System data is available to ramp control operators so that they have real-time and predicted knowledge of aircraft arrival information. This information includes aircraft identification, aircraft position in TRACON airspace, and is used to compute estimate touchdown time. This data allows users to better coordinate ground support operations, allocating resources such as ramp and airport services in a more efficient manner.

Technical Status

Current Assessment **G** **G** Previous Assessment

Significant Accomplishments:

- Surface Movement Advisor initial daily use has been instituted at all planned sites with New York, Chicago O'Hare, and Dallas-Ft. Worth TRACONs serving Newark, Teterboro, Chicago O'Hare, and Dallas-Ft. Worth airports.

- The Free Flight Phase One SMA Program was successfully completed two weeks early on December 31, 1998.

Surface Movement Advisor

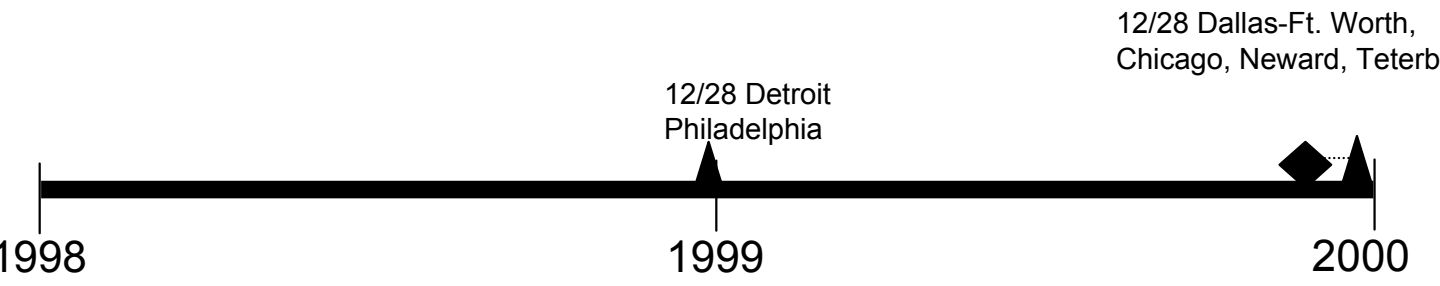
Schedule Status

Current Assessment G

G Previous Assessment

Planned
Actual
Slip
Early

Schedule:



Near-Term Schedule:

Initial Daily Use Detroit and Philadelphia	December 31, 1998	Complete
Initial Daily Use Dallas-Ft. Worth, Chicago, Newark, Teterboro	December 17, 1998	Complete (2 weeks e

April 23, 2002

Delayed due t staffing shorta

Traffic Management Advisor / CTAS Terminal

Traffic Management Advisor helps en route and terminal controllers schedule aircraft. The CTAS Terminal tool provides an enhanced situational awareness at the TRACON. CTAS Terminal operates in conjunction with Traffic Management Advisor to provide an integrated traffic management system decision support tool suite. En route and terminal traffic management coordinators will use Traffic Management Advisor.

Technical Status

Current Assessment **G** **G** Previous Assessment

ignificant Accomplishments:

- All seven of the scheduled Traffic Management Advisor systems are now in daily use status.

- Updates of the Adaptation Procedures Manual and Training Package were provided to all sites on December 15.

Traffic Management Advisor / CTAS Terminal

Schedule Status

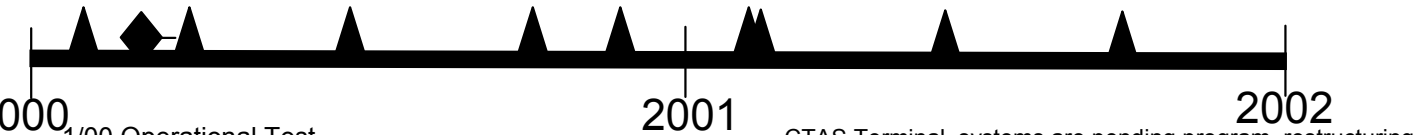
Current Assessment: G Previous Assessment: G

Planned
Actual
Slip
Early

Schedule:

CTAS Terminal is listed as Terminal (previously pFAST)

2/01 ZTL TMA IDU
2/01 SCT Terminal IDU
5/01 ZMA TMA IDU
8/01 ZOA TMA IDU



1/00 Operational Test
2/00 ZFW TMA IDU (Original 4/00)
2/00 DFW Terminal IDU (Original 4/00)
6/00 ZMP TMA IDU
9/00 ZDV TMA IDU
11/00 ZLA TMA IDU

CTAS Terminal systems are pending program restructuring

Near-Term Schedule:

Traffic Management Advisor achieved initial daily use at Los Angeles Center	November 21, 2000	Complete
TMA achieved “planned capability achieved” status at Minneapolis Center	December 20, 2000	Complete
Terminal began IDU at Southern California TRACON	February 9, 2001	Complete
Terminal begins IDU at Atlanta TRACON (A80)	On Hold	
TMA training for extended controller cadre at Miami Center	March 22, 2001	Complete
TMA achieves IDU at Miami Center	May 23, 2001	Complete
TMA achieves IDU at Oakland Center	August 29, 2001 (5 days early)	Complete
Software Spiral 3 complete	June, 2002 (Rescheduled due to funding reprioritization)	

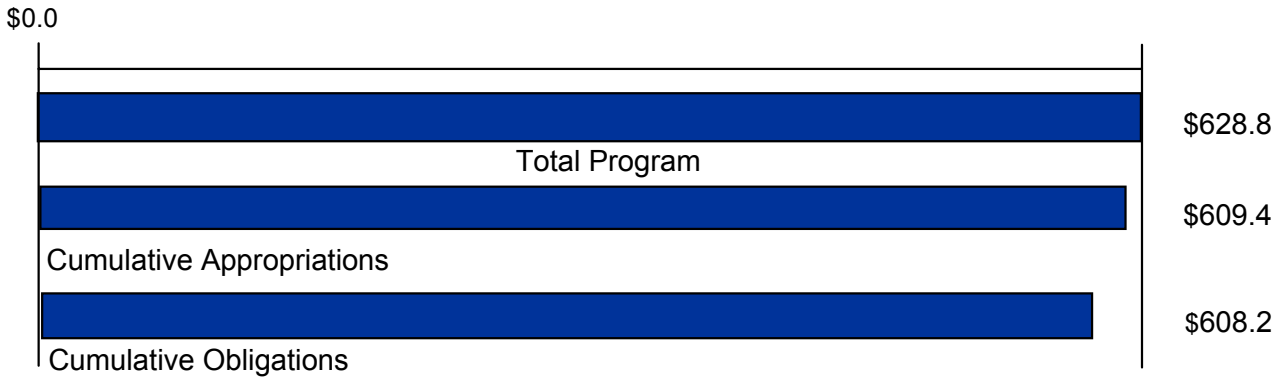
Free Flight Phase 1
Program Financial Status
As of 12/31/02

Current Assessment: G Previous Assessment: G

F&E Funding

Program: (FY98-FY02)	$628.8
Prior Year Net Appropriations:	$506.5
Fiscal Year ('02) Appropriations:	$102.9
Prior Year Obligations:	$505.3
Fiscal Year ('02) Obligations:	$102.9
Unobligated Appropriations:	$ 1.2

Funding Profile: ($M) (F&E)



Contract Cost Status:

- Satisfactory.

Program Funding:

- The $628.8M Free Flight Phase 1 five year (FY98–02) total is the program baseline presented to the JRC on 4/7/99.
- For FY01, $0.5M originally allocated to the FFP1 CDM Program was provided to DSP (not part of the FFP1 baseline) as a result of Conference Report language and 0.22% was rescinded.
- In FY02 $18.4M was deducted through reprogramming actions.

APPENDICES

Status Report Definitions

Technical Status:

***Significant Accomplishments*:** Significant technical tasks completed since the last report.

***Concerns and Ongoing Actions*:** Outstanding technical concerns, which must be resolved to assure successful accomplishment of technical project objectives and the actions being taken to resolve them, and discussion of other technical activities.

Schedule Status:

Major Milestone Accomplishment: Listing of the Level I and Level II milestones completed during the past reporting period. (Sixty managed milestones have been established. Level I = 10 most significant. Level II = remaining 50 managed milestones.)

***Concerns and Ongoing Actions*:** Discussion of current and potential schedule impacts resulting from schedule slippage and the actions taken to develop work-arounds or recovery plans, and other schedule related activities.

Financial Status:

***Contract Cost Status*:** Assessment of cost performance status as to the executability of the program within approved resources.

***Program Funding*:** Assessment of the overall adequacy and availability of programmed and budgeted funds.

***Concerns and Ongoing Actions*:** Discussion of current or potential impacts to the cost baseline or estimates to complete, arising from contractor performance and the actions being taken to mitigate them; impacts of funding shortfalls, reductions, or non-availability due to Congressional or DOT decisions and the actions being taken to resolve or mitigate them; and other financial related activities.

Assessment Criteria

echnical Status:

Red: Technical problems will cause the system-level performance to fall below the defined *threshold* value established for any *critical* parameter in the operational requirements documents (ORD).

Yellow: Technical problems will cause the system-level performance to fall below the defined threshold *objective* value for any *critical* parameter in the ORD.

Green: No technical problems exist causing system-level performance to fall below defined *objective* performance values established for all *critical* parameters in the ORD.

chedule Status:

Red:	Level I Milestone	(next 6 months)	>	15 working days late
		(6-12 months)	>	30 working days late
		(beyond 12 mo.)	>	60 working days late
Yellow:	Level I Milestone	(next 6 months)	>	6 working days late
	Level II Milestone	(next 6 months)	>	15 working days late
		(6-12 months)	>	30 working days late
		(beyond 12 mo.)	>	60 working days late

Green: Level I and II Milestones are on schedule within the criteria listed above.

inancial Status:

Red: Total approved program is insufficient to cover the full scope of the project development and implementation, or Government's projection of contractor's estimate-at-completion *will* exceed contractor's total allocated budget.

Yellow: Current year project needs do not match available project dollars and may require current year reprogramming, or Government's projection of Contractor's estimate-at-completion *may* exceed contractor's total allocated budget.

Green: Funding authorizations meet the program requirements, and contractor's total allocated budget is adequate to meet project requirements.

Acronyms and Abbreviations

	Atlanta TRACON
M	Collaborative Decision Making
DLC	Controller-Pilot Data Link Communications
CT	Collaborative Routing Coordination Tool
AS	Center/TRACON Automation System
W	Dallas Fort Worth
T	Department of Transportation
P	Departure Sequencing Program
	Facilities and Equipment
1	Free Flight Phase One
2	Free Flight Phase Two
	Fiscal Year
	Initial Daily Use
	Joint Resources Council
S	National Airspace System
A	Planned Capability Achieved

pFAST	Passive Final Approach Spacing Tool
RVR	Runway Visual Range
SCT	Southern California TRACON
SMA	Surface Movement Advisor
TMA	Traffic Management Advisor
TRACON	Terminal Radar Approach Control
URET	User Request Evaluation Tool
WARP	Weather and Radar Processor
ZDV	Denver ARTCC
ZFW	Fort Worth ARTCC
ZLA	Los Angeles ARTCC
ZMA	Miami ARTCC
ZMP	Minneapolis ARTCC
ZOA	Oakland ARTCC
ZTL	Atlanta ARTCC